COLORADO DISCHARGE PERMIT SYSTEM (CDPS)
FACT SHEET FOR PERMIT NUMBER CO0039624
CITY OF MONTROSE, CITY OF MONTROSE WWTF
MONTROSE COUNTY

TABLE OF CONTENTS

I. TYPE OF PERMIT

A. Permit Type: Domestic - Major Municipal, Mechanical Plant, Fifth Renewal

B. Discharge To: Surface Water

II. FACILITY INFORMATION

A. SIC Code: 4952 Sewerage Systems

B. Facility Classification: Class A per Section 100.5.2 of the Water and Wastewater Facility Operator Certification Requirements

C. Facility Location: Latitude: 38.51057° N, Longitude: 107.921628° W

D. Permitted Feature: 001A, following disinfection and prior to mixing with the receiving stream. 38.510° N, 107.921° W

The location provided above will serve as the point of compliance for this permit and it is appropriate as it is located after all treatment and prior to discharge to the receiving water.

E. Facility Flows: **4.32 MGD**

F. Major Changes From Last Renewal:

- Approved TMDL with waste load allocation for selenium implemented
- Segment changed from Use Protected to Undesignated resulting to antidegradation review, consequently resulting to lower limits for chronic ammonia.
- Implementation of a more stringent *E. Coli* requirement due to changes in segment from COGUUN04b (Recreation N) to COGUUN04a (Recreation E).
- Monitoring for total inorganic nitrogen, due to water supply classification.

III. RECEIVING STREAM

A. Waterbody Identification: *COGUUN04a, Uncompahgre River*

B. Water Quality Assessment:

An assessment of the stream standards, low flow data, and ambient stream data has been performed to determine the assimilative capacities for *Uncompahgre River* for potential pollutants of concern. This information, which is contained in the Water Quality Assessment (WQA) for this receiving stream, also includes an antidegradation review, where appropriate. The Division's Permits Section has reviewed the assimilative capacities to determine the appropriate water quality-based effluent limitations as well as potential limits based on the antidegradation evaluation, where applicable. The limitations based on the assessment and other evaluations conducted as part of this fact sheet can be found in Part I.A of the permit.

Permitted Feature *001A* will continue to be the authorized discharge point to the receiving stream.

IV. FACILITY DESCRIPTION

A. Infiltration/Inflow (I/I)

As per its permit application, the 30-day average flow does not exceed 120 gallons per capita per day. No I/I problem was reported.

B. Lift Stations

Table IV-1 summarizes the information provided in the renewal application for the lift stations in the service area.

Table IV-1 – Lift Station Summary

Station Name/#	*Firm Pump Capacity (gpm)*	*Peak Flows (gpd)*	*% Capacity (based on peak flow & 2 pumps)*
Cedar Creek	Two @ 196	70000	12.4
Home Depot	Two @ 60	3000	1.7
LaSalle	Two @ 40	2000	1.7
Friendly Hills	Two @ 47	2000	1.5
Riverview	Two @ 40	1000	0.9
Sears	Two @ 94	8000	3.0
Landfill	Two @ 35	100	0.1
Business Park	Two @ 35	400	0.4
Trinity Village	Two @ 196	2600	0.5
Spruce Point	Two @ 196	2000	0.4
Rivers Landing	Two @ 196	3000	0.5

C. Chemical Usage

The permittee did not specify any chemicals for use in waters that may be discharged. On this basis, no chemicals are approved under this permit. Prior to use of any applicable chemical, the permittee must submit a request for approval that includes the most current Material Safety Data Sheet (MSDS) for that chemical. Until approved, use of any chemical in waters that may be discharged could result in a discharge of pollutants not authorized under the permit. Also see Part II.A.1. of the permit.

Chemicals deemed acceptable for use in waters that will or may be discharged to waters of the State are acceptable only when used in accordance with all state and federal regulations, and in strict accordance with the manufacturer's site-specific instructions.

D. Treatment Facility, Facility Modifications and Capacities

The facility consists of a headworks with a mechanical bar screen, an aerated grit chamber, and a 12-inch influent Parshall flume; followed by three oxidation ditches, two secondary clarifiers, and a UV disinfection system prior to discharge through a 30-inch pipe to the Uncompahgre River. Effluent flow is measured by an 18-inch Parshall flume. The permittee has not performed any construction at this facility that would change the hydraulic capacity of 4.32 MGD or the organic capacity of 10,246 lbs BOD_5/day, which were specified in Site Approval 4946. That document should be referred to for any additional information.

Pursuant to Section 100.5.2 of the Water and Wastewater Facility Operator Certification Requirements, this facility will require a Class A certified operator.

E. Biosolids Treatment and Disposal

Biosolids are treated in an aerobic digester. Liquid is removed in a centrifuge, then the dewatered biosolids are delivered to a city owned farm near Olathe, CO, for land application.

1. EPA General Permit

EPA Region 8 issued a General Permit (effective October 19, 2007) for Colorado facilities whose operations generate, treat, and/or use/dispose of sewage sludge by means of land application, landfill, and surface disposal under the National Pollutant Discharge Elimination System. All Colorado facilities are required to apply for and to obtain coverage under the EPA General Permit.

2. Biosolids Regulation (Regulation No. 64, Colorado Water Quality Control Commission)

   While the EPA is now the issuing agency for biosolids permits, Colorado facilities that land apply biosolids must comply with requirements of Regulation No. 64, such as the submission of annual reports as discussed later in this factsheet.

V. PERFORMANCE HISTORY

A. Monitoring Data

1. Discharge Monitoring Reports – The following table summarizes the effluent data reported on the Discharge Monitoring Reports (DMRs) for the previous permit term, from a period of DMR review from January 2007 through September 2012.

Table V-1 – Summary of DMR Data for Permitted Feature 001A

Parameter	*# Samples or Reporting Periods*	*Reported Average Concentrations Avg/Min/Max*	*Reported Maximum Concentrations Avg/Min/Max*	*Previous Avg/Max/AD Permit Limit*	*Number of Limit Excursions*
Effluent Flow (MGD)	*69*	*2.1/1.7/2.8*	*2.4/1.8/3.6*	*4.32/NA*	
Temp Daily Max (°C) March-Nov*	*25*		*20/13/26*	*NA/Report*	
Temp Daily Max (°C) Dec-Feb*	*8*		*11/10/13*	*NA/Report*	
Temp MWAT (°C) March-Nov*	*25*	*20/11/26*		*NA/Report*	
Temp MWAT (°C) Dec-Feb*	*8*	*12/10/13*		*NA/Report*	
*pH (su)***	*69*	*7.3/6.9/7.6*	*7.5/7.2/7.8*	*6.5 - 9*	
E. coli (#/100 ml)	*38*	*29/8/287*	*57/10/701*	*2000/4000*	
TRC (mg/l)	*56*	*0/0/0*	*0/0/0*	*0.059/0.092*	
NH3 as N, Tot (mg/l) Jan	*6*	*0.25/0.09/0.52*	*0.7/0.08/1.9*	*11.6/17.1*	
NH3 as N, Tot (mg/l) Feb	*6*	*1.5/0.07/7.2*	*2.2/0.1/10*	*11.1/16*	
NH3 as N, Tot (mg/l) Mar	*6*	*0.38/0.12/0.84*	*0.78/0.12/2.6*	*9.3/13.5*	
NH3 as N, Tot (mg/l) Apr	*6*	*0.93/0.09/3.3*	*3/0.09/14*	*8.7/14.4*	
NH3 as N, Tot (mg/l) May	*6*	*0.17/0.06/0.28*	*0.33/0.07/0.72*	*16.2/30*	
NH3 as N, Tot (mg/l) Jun	*6*	*0.12/0.08/0.23*	*0.23/0.09/0.65*	*22/41*	
NH3 as N, Tot (mg/l) Jul	*6*	*0.23/0.09/0.42*	*0.68/0.11/1.6*	*21/37*	
NH3 as N, Tot (mg/l) Aug	*6*	*0.19/0.06/0.47*	*0.25/0.07/0.6*	*14.3/28*	
NH3 as N, Tot (mg/l) Sep	*6*	*0.12/0.05/0.21*	*0.17/0.06/0.22*	*8.5/21*	
NH3 as N, Tot (mg/l) Oct	*5*	*0.15/0.06/0.29*	*0.39/0.11/1.4*	*9.2/17.5*	
NH3 as N, Tot (mg/l) Nov	*5*	*0.2/0.11/0.39*	*0.36/0.11/1.1*	*10.6/14.5*	
NH3 as N, Tot (mg/l) Dec	*5*	*0.13/0.08/0.28*	*0.18/0.11/0.4*	*10.7/14.1*	
BOD5, effluent (mg/l)	*69*	*3.6/1.3/8.1*	*4.2/1.5/11*	*30/45/*	
BOD5 (% removal)	*69*	*98/96/99*	*NA/NA/NA*	*85*	
TSS, effluent (mg/l)	*69*	*4.5/0.6/43*	*6.4/0.8/62*	*30/45/*	*1/1*
TSS (% removal)	*69*	*98/90/99*	*NA/NA/NA*	*85*	
Oil and Grease (mg/l)	*69*	*NA/NA/NA*	*0/0/0*	*NA/NA/*	

Parameter	*# Samples or Reporting Periods*	*Reported Average Concentrations Avg/Min/Max*	*Reported Maximum Concentrations Avg/Min/Max*	*Previous Avg/Max/AD Permit Limit*	*Number of Limit Excursions*
TDS (mg/l)				*NA*	
PWS intake (mg/l)	*31*	*205/140/1001*	*182/134/1001*	*Report/Report/*	
WWTF effluent (mg/l)	*31*	*987/765/1231*	*971/700/1243*	*Report/Report/*	
Cu, Dis (µg/l)	*38*	*19/8.9/60*	*19/8.9/60*	*Report/Report*	
Fe, TR (µg/l)	*38*	*42/5/92*	*42/5/92*	*Report/Report*	
Hg, Tot (µg/l)	*23*	*0.0058/<0.0093/0.033*	*0.0058/<0.0093/0.033*	*0.061/Report*	
Se, Dis (µg/l)	*38*	*7.8/2.6/17*	*8.8/2.9/22*	*Report/Report*	
WET, chronic					
pimephales lethality, Stat Diff	*6*	*//*	*100/100/100*	*Report*	
pimephales lethality, IC25	*6*	*//*	*100/100/100*		
ceriodaphnia lethality, Stat Diff	*6*	*//*	*100/100/100*	*Report*	
ceriodaphnia lethality, IC25	*6*	*//*	*100/100/100*		
pimephales toxicity, Stat Diff	*5*	*//*	*100/100/100*	*Report*	
pimephales toxicity, IC25	*6*	*//*	*100/100/100*		
ceriodaphnia toxicity, Stat Diff	*5*	*//*	*100/100/100*	*Report*	
ceriodaphnia toxicity, IC25	*6*	*//*	*100/100/100*		

**The temperature data shows the MWAT values in the "average" column, and the daily maximum reported values in the "maximum" column.*

***The pH data shows the minimum reported values in the "average" column, and the maximum reported values in the "maximum" column.*

2. Additional Data –The following table summarizes data submitted with the 2012 Annual pretreatment report.

Table V-2 – Summary of Pre-treatment Data for total metals and cyanide for the influent sampled on 09/18/12

Parameter	**09/18/12**
Arsenic, µg/l	*1.1*
Cadmium, µg/l	*<0.2*
Chromium, µg/l	*<4.0*
Copper, µg/l	*89.2*
Lead, µg/l	*2.1*
Mercury, µg/l	*<0.10*
Molybdenum, µg/l	*5.8*
Nickel, µg/l	*9.3*
Selenium, µg/l	*12.7*
Silver, µg/l	*0.36*
Zinc, µg/l	*98.5*
Total Cyanide, mg/l	*<0.005*

B. Compliance With Terms and Conditions of Previous Permit

1. Effluent Limitations – The data shown in the preceding table(s) indicates compliance with the numeric limitations of the previous permit. There were two TSS (daily max and 30-day ave) violations that were reported on 10/31/2007. No numeric violations were reported since the permit was issued in 2009.

   In accordance with 40 CFR Part 122.41(a), any permit noncompliance constitutes a violation of the Clean Water Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application.

VI. DISCUSSION OF EFFLUENT LIMITATIONS

A. Regulatory Basis for Limitations

1. Technology Based Limitations

   a. Federal Effluent Limitation Guidelines – The Federal Effluent Limitation Guidelines for domestic wastewater treatment facilities are the secondary treatment standards. These standards have been adopted into, and are applied out of, Regulation 62, the Regulations for Effluent Limitations.

   b. Regulation 62: Regulations for Effluent Limitations – These Regulations include effluent limitations that apply to all discharges of wastewater to State waters and are shown in Section VIII of the WQA. These regulations are applicable to the discharge from the City of Montrose WWTF.

2. Numeric Water Quality Standards - The WQA contains the evaluation of pollutants limited by water quality standards. The mass balance equation shown in Section VI of the WQA was used for most pollutants to calculate the potential water quality based effluent limitations (WQBELs), M_2, that could be discharged without causing the water quality standard to be violated. For ammonia, the AMMTOX Model was used to determine the maximum assimilative capacity of the receiving stream. A detailed discussion of the calculations for the maximum allowable concentrations for the relevant parameters of concern is provided in Section V of the Water Quality Assessment developed for this permitting action.

   The maximum allowable effluent pollutant concentrations determined as part of these calculations represent the calculated effluent limits that would be protective of water quality. These are also known as the water quality-based effluent limits (WQBELs). Both acute and chronic WQBELs may be calculated based on acute and chronic standards, and these may be applied as daily maximum (acute) or 30-day average (chronic) limits.

3. Narrative Water Quality Standards - Section 31.11(1)(a)(iv) of The Basic Standards and Methodologies for Surface Waters (Regulation No. 31) includes the narrative standard that State surface waters shall be free of substances that are harmful to the beneficial uses or toxic to humans, animals, plants, or aquatic life.

a. Whole Effluent Toxicity - The Water Quality Control Division has established the use of WET testing as a method for identifying and controlling toxic discharges from wastewater treatment facilities. WET testing is being utilized as a means to ensure that there are no discharges of pollutants "in amounts, concentrations or combinations which are harmful to the beneficial uses or toxic to humans, animals, plants, or aquatic life" as required by Section 31.11 (1) of the Basic Standards and Methodologies for Surface Waters. The requirements for WET testing are being implemented in accordance with Division policy, Implementation of the Narrative Standard for Toxicity in Discharge Permits Using Whole Effluent Toxicity (Sept 30, 2010). Note that this policy has recently been updated and the permittee should refer to this document for additional information regarding WET.

4. Water Quality Regulations, Policies, and Guidance Documents

a. Antidegradation - Since the receiving water is Undesignated, an antidegradation review is required pursuant to Section 31.8 of The Basic Standards and Methodologies for Surface Water. As set forth in Section VII of the WQA, an antidegradation evaluation was conducted for pollutants when water quality impacts occurred and when the impacts were significant. Based on the antidegradation requirements and the reasonable potential analysis discussed above, antidegradation-based average concentrations (ADBACs) may be applied.

According to Division procedures, the facility has three options related to antidegradation-based effluent limits: (1) the facility may accept ADBACs as permit limits (see Section VII of the WQA); (2) the facility may select permit limits based on their non-impact limit (NIL), which would result in the facility not being subject to an antidegradation review and thus the antidegradation-based average concentrations would not apply (the NILs are also contained in Section VII of the WQA); or (3) the facility may complete an alternatives analysis as set forth in Section 31.8(3)(d) of the regulations which would result in alternative antidegradation-based effluent limitations.

The effluent must not cause or contribute to an exceedance of a water quality standard and therefore the WQBEL must be selected if it is lower than the NIL. Where the WQBEL is not the most restrictive, the discharger may choose between the NIL or the ADBAC: the NIL results in no increased water quality impact; the ADBAC results in an “insignificant” increase in water quality impact. The ADBAC limits are imposed as two-year average limits.

b. Antibacksliding – As the receiving water is designated Reviewable and the Division has performed an antidegradation evaluation, in accordance with the Antidegradation Guidance, the antibacksliding requirements in Regulation 61.10 have been met.

c. Determination of Total Maximum Daily Loads (TMDLs) – This factsheet and the accompanying permit include TMDLs developed as specified in Total Maximum Daily Load Assessment for Gunnison River and Tributaries, Uncompahgre River and Tributaries and the corresponding waste load allocations (WLAs) for selenium. As required under the Clean Water Act Section 303(d), these TMDLs have been submitted, through the normal public notification process, to EPA Region VIII for their review and approval, and were approved on February 14, 2011.

d. Colorado Mixing Zone Regulations – Pursuant to section 31.10 of The Basic Standards and Methodologies for Surface Water, a mixing zone determination is required for this permitting action. The Colorado Mixing Zone Implementation Guidance, dated April 2002, identifies the

process for determining the meaningful limit on the area impacted by a discharge to surface water where standards may be exceeded (i.e., regulatory mixing zone). This guidance document provides for certain exclusions from further analysis under the regulation, based on site-specific conditions.

The guidance document provides a mandatory, stepwise decision-making process for determining if the permit limits will not be affected by this regulation. Exclusion, based on Extreme Mixing Ratios, may be granted if the ratio of the facility design flow to the chronic low flow (30E3) is greater than 2:1. The facility is excluded based on the mixing zone study report of April 2010, where the second threshold test excluded the facility from further analysis.

e. Salinity Regulations – In compliance with the Colorado River Salinity Standards and the Colorado Discharge Permit System Regulations, the permittee shall monitor for total dissolved solids on a **Monthly** basis. Samples shall be taken at Permitted Feature 001A.

An evaluation of the discharge of total dissolved solids indicates that the City of Montrose facility exceeds the threshold of 1 ton/day or 350 tons/year of salinity. To determine the TDS loading from this facility, the average reported TDS values were multiplied by the average flow, then by 8.34. The average was determined to be 8.6 tons/day.

A salinity study was done by the facility in 1989 and concluded that the primary source of salinity is from groundwater infiltrating into the collection system. While the study is old, the permittee maintains that the same conditions exist. The permit issued for this facility in June 2009 asserts that the permittee has taken proper steps to identify salinity issues, and data submitted show high TDS in the groundwater. As with the 2009 permit, a salinity study will not be required at this time. Salinity monitoring will continue in this permit.

f. Reasonable Potential Analysis – Using the assimilative capacities contained in the WQA, an analysis must be performed to determine whether to include the calculated assimilative capacities as WQBELs in the permit. This reasonable potential (RP) analysis is based on the Determination of the Requirement to Include Water Quality Standards-Based Limits in CDPS Permits Based on Reasonable Potential, dated December, 2002. This guidance document utilizes both quantitative and qualitative approaches to establish RP depending on the amount of available data.

A qualitative determination of RP may be made where ancillary and/or additional treatment technologies are employed to reduce the concentrations of certain pollutants. Because it may be anticipated that the limits for a parameter could not be met without treatment, and the treatment is not coincidental to the movement of water through the facility, limits may be included to assure that treatment is maintained.

A qualitative RP determination may also be made where a federal ELG exists for a parameter, and where the results of a quantitative analysis results in no RP. As the federal ELG is typically less stringent than a limitation based on the WQBELs, if the discharge was to contain concentrations at the ELG (above the WQBEL), the discharge may cause or contribute to an exceedance of a water quality standard.

To conduct a quantitative RP analysis, a minimum of 10 effluent data points from the previous 5 years, should be used. The equations set out in the guidance for normal and lognormal distribution, where applicable, are used to calculate the maximum estimated pollutant

concentration (MEPC). For data sets with non-detect values, and where at least 30% of the data set was greater than the detection level, MDLWIN software is used consistent with Division guidance to generate the mean and standard deviation, which are then used to establish the multipliers used to calculate the MEPC. If the MDLWIN program cannot be used the Division's guidance prescribes the use of best professional judgment.

For some parameters, recent effluent data or an appropriate number of data points may not be available, or collected data may be in the wrong form (dissolved vs. total) and therefore may not be available for use in conducting an RP analysis. Thus, consistent with Division procedures, monitoring will be required to collect samples to support a RP analysis and subsequent decisions for a numeric limit. A compliance schedule may be added to the permit to require the request of an RP analysis once the appropriate data have been collected.

For other parameters, effluent data may be available to conduct a quantitative analysis, and therefore an RP analysis will be conducted to determine if there is RP for the effluent discharge to cause or contribute to exceedances of ambient water quality standards. The guidance specifies that if the MEPC exceeds the maximum allowable pollutant concentration (MAPC), limits must be established and where the MEPC is greater than half the MAPC (but less than the MAPC), monitoring must be established. Table VI-1 contains the calculated MEPC compared to the corresponding MAPC, and the results of the reasonable potential evaluation, for those parameters that met the data requirements. The RP determination is discussed for each parameter in the text below.

Table VI-1 – Reasonable Potential Analysis

Parameter	30-Day Average			7-Day Ave or Daily Max		
	MEPC	WQBEL (MAPC)	Reasonable Potential	MEPC	WQBEL (MAPC)	Reasonable Potential
Temp Daily Max (°C) Dec-Feb				13	14	Monitor
Temp MWAT (°C) March-Nov	33	28	Monitor			
Temp MWAT (°C) Dec-Feb	13	14	Monitor			
E. coli (#/100 ml)	1060	610	Yes	1031	1220	Yes
TRC (mg/l)	0	0.027	Yes (Qual)	0	0.092	Yes (Qual)
Nitrate/TIN as N (mg/l)	NA			NA	46	Monitor
Nitrite as N (mg/l)	NA			NA	2.4	Monitor
NH3 as N, Tot (mg/l) Jan	0.52	5.3	Yes (Qual)	1.9	23	Yes (Qual)
NH3 as N, Tot (mg/l) Feb	7.2	5.3	Yes (Qual)	10	22	Yes (Qual)
NH3 as N, Tot (mg/l) Mar	0.84	5.3	Yes (Qual)	2.6	19	Yes (Qual)
NH3 as N, Tot (mg/l) Apr	3.3	5.3	Yes (Qual)	14	27	Yes (Qual)
NH3 as N, Tot (mg/l) May	0.28	5.3	Yes (Qual)	0.72	33	Yes (Qual)
NH3 as N, Tot (mg/l) Jun	0.23	5.3	Yes (Qual)	0.65	52	Yes (Qual)
NH3 as N, Tot (mg/l) Jul	0.42	5.3	Yes (Qual)	1.6	53	Yes (Qual)
NH3 as N, Tot (mg/l) Aug	0.47	5.3	Yes (Qual)	0.6	47	Yes (Qual)
NH3 as N, Tot (mg/l) Sep	0.21	5.3	Yes (Qual)	0.22	49	Yes (Qual)
NH3 as N, Tot (mg/l) Oct	0.29	5.3	Yes (Qual)	1.4	36	Yes (Qual)
NH3 as N, Tot (mg/l) Nov	0.39	5.3	Yes (Qual)	1.1	44	Yes (Qual)
NH3 as N, Tot (mg/l) Dec	0.28	5.3	Yes (Qual)	0.4	26	Yes (Qual)
As, Dis (µg/l)	NA	1862	No (Qual)	NA	1862	No (Qual)
Cd, Dis (µg/l)	NA	7.3	No (Qual)	NA	48	No (Qual)
Cr, TR (µg/l)	NA	274	No (Qual)	NA	274	No (Qual)
Cr+3, TR (µg/l)	NA	274	No (Qual)	NA	274	No (Qual)
Cr+3, Dis (µg/l)	NA	1355	No (Qual)	NA	NA	NA
Cr+6, Dis (µg/l)	NA	67	No (Qual)	NA	88	No (Qual)
Cu, Dis (µg/l)	66	60	Yes	66	263	No
CN, Free (µg/l)				NA	27	No (Qual)
Fe, Dis (µg/l)	NA	1741	No (Qual)			
Fe, TR (µg/l)	156	5110	No			
Pb, Dis (µg/l)	NA	61	No (Qual)	NA	1473	No (Qual)
Mn, Dis (µg/l)	NA	187	Monitor	NA	25477	Monitor
Mo, TR (µg/l)	NA	972	No (Qual)	NA	NA	NA
Hg, Tot (µg/l)	0.13	0.061	Yes	NA	NA	NA
Ni, Dis (µg/l)	NA	984	No (Qual)	NA	7986	No (Qual)
Se, Dis (µg/l)	18	15	Yes	24	90	Yes (Qual)
Ag, Dis (µg/l)	NA	19	No (Qual)	NA	110	No (Qual)
Zn, Dis (µg/l)	NA	2470	No (Qual)	NA	2951	No (Qual)
Chloride (mg/l)	NA	1519	No (Qual)	NA	NA	NA
Sulfate (mg/l)	NA	1519	No (Qual)	NA	NA	NA
Nonylphenol (µg/l)	NA	40	Monitor	NA	153	Monitor

B. Parameter Evaluation

BOD_5 - The BOD_5 concentrations in Reg 62 are the most stringent effluent limits and are therefore applied. The removal percentages for BOD_5 also apply based on the Regulations for Effluent Limitations. These limitations are the same as those contained in the previous permit and are imposed upon the effective date of this permit.

Total Suspended Solids - The TSS concentrations in Reg 62 are the most stringent effluent limits and are therefore applied. The removal percentages for TSS also apply based on the Regulations for Effluent Limitations. These limitations are the same as those contained in the previous permit and are imposed upon the effective date of this permit.

Oil and Grease – The oil and grease limitations from the Regulations for Effluent Limitations are applied as they are the most stringent limitations. This limitation is the same as those contained in the previous permit and is imposed upon the effective date of this permit.

pH - This parameter is limited by the water quality standards of 6.5-9.0 s.u., as this range is more stringent than other applicable standards. This limitation is the same as that contained in the previous permit and is imposed upon the effective date of this permit.

E. Coli – The limitation for *E. Coli* is based upon the WQBEL as described in the WQA. With the available data the normal (30-day average) and log-normal (7-day average) program was used to determine the appropriate statistics to determine the MEPC. The MEPC was greater than the MAPC and therefore limitations are required. Limitations of 610 #/100ml (30-day ave) and 1220 #/100ml (7-day ave) have been included in the permit.

Previous monitoring as shown in Table V-1 indicate that this limitation can be met and is therefore imposed upon the effective date of the permit.

Total Residual Chlorine (TRC) - The limitation for TRC is based upon the NIL as described in the WQA. A qualitative determination of RP has been made as chlorine may be used in the treatment process. Limitations of 0.027 mg/l (30-day ave) and 0.092 (daily max) have been included in the permit.

Previous monitoring as shown in Table V-1 indicate that this limitation can be met and is therefore imposed upon the effective date of the permit.

Nitrate, Nitrite / Total Inorganic Nitrogen - A qualitative determination of RP has been made as the stream segment is classified for Water Supply use, and a water intake is located less than 10 miles downstream of the discharge location. There are no data to perform a quantitative RP analysis for these parameters; therefore monitoring has been added to this permit for the collection of data for future quantitative RP analysis.

Chloride and Sulfate - There are no data to perform a quantitative RP analysis for these parameters; however, a qualitative “no RP” determination has been made based on the high WQBELs for these parameters. Due to the source water and the lack of an I/I problem, the effluent is not expected to have chloride and sulfate as high as 1519 mg/l. Limitations are not necessary at this time.

Ammonia - The limitation for ammonia is based upon the NILs as described in the WQA. A qualitative determination of RP has been made as ammonia is a parameter of concern for municipal wastewater

treatment facilities.

Previous monitoring as shown in Table V-1 indicate that these limitations can be met and are therefore effective immediately.

Total Arsenic, Potentially Dissolved Cadmium, Potentially Dissolved Trivalent Chromium, Total Recoverable Trivalent Chromium, Dissolved Hexavalent Chromium, Cyanide, Potentially Dissolved Lead, Potentially Dissolved Nickel, Total Recoverable Molybdenum, Potentially Dissolved Silver, Potentially Dissolved Zinc – There were no effluent samples to determine a quantitative RP, therefore a qualitative no RP was made based upon the pretreatment data of the influent on Table V-2 and the 2009 determination of no RP using effluent samples. Limitations are not necessary at this time.

Potentially Dissolved Copper – The RP analysis for dissolved copper was based upon the NIL as described in the WQA. With the available data the log-normal program was used to determine the appropriate statistics to determine the MEPC. The MEPC was greater than the MAPC and therefore limitations are required. Therefore the requirement for 60 ug/l (30-day ave) and "Report" for daily max have been added to the permit.

Previous monitoring as shown in Table V-1 indicate that these limitations can be met and are therefore effective immediately.

Total Recoverable Iron - The RP analysis for Fe (TR) was based upon the WQBEL and the potential ADBAC which is estimated at 767 µg/l (15% of 5110 µg/l). With the available data the normal program was used to determine the appropriate statistics to determine the MEPC. The MEPC was less than half of the MAPC and therefore limitations are not necessary at this time.

Dissolved Iron - There were no effluent samples to determine a quantitative RP, therefore a qualitative no RP was made based upon effluent report for Fe (TR). The MAPC for dissolved iron of 1741 µg/l is significantly higher than the MEPC for Fe (TR) of 156 µg/l. Limitations are not necessary at this time.

Dissolved Manganese - There are no data to perform a quantitative RP analysis for this parameter; therefore monitoring has been added to this permit for the collection of data for future quantitative RP analysis.

Total Mercury - The RP analysis for mercury was based upon the WQBEL as described in the WQA. With the available data the normal program was used to determine the appropriate statistics to determine the MEPC. The MEPC was greater than the MAPC and therefore limitations are required. Therefore a, 0.061 µg/l (30-day avg) requirement has been added to the permit. This limitation is the same as that contained in the previous permit and it is imposed upon the effective date of this permit.

Potentially Dissolved Selenium - The RP analysis for selenium was based upon the WQBEL as described in the WQA. With the available data the normal program was used to determine the appropriate statistics to determine the MEPC. The MEPC was greater than the MAPC and therefore limitations are required. Therefore a, 15 µg/l (30-day ave) and 90 µg/l (daily max) requirement has been added to the permit.

Previous monitoring as shown in Table V-1, using the last 2 years of data, indicate that this limitation can be met and is therefore effective immediately.

Also the WLA for the TMDL of 0.29 lbs/day has been included and will be imposed upon the effective date of the permit.

Temperature - The MWAT is the maximum weekly average temperature, as determined by a seven day rolling average, using at least 3 equally spaced temperature readings in a 24-hour day (at least every 8 hours for a total of at least 21 data points).

The daily maximum is defined as the maximum 2 hour average, with a minimum of 12 equally spaced measurements throughout the day.

The RP analysis indicates that limitations are required, however, since continuous ambient water quality data, in accordance with the definition of the standard, were not available to calculate any potential assimilative capacity, monitoring will be required in this permit. The permittee is encouraged to collect instream temperature data on a continuous basis, if calculation of assimilative capacity for temperature is desired. This data may be used during the next permit renewal, so that the assimilative capacity of the receiving water (if applicable) can be calculated and used to determine a limitation based on the streams dilution potential. **If such data is not available, the Division will likely set the limitation at the water quality standard (i.e. end of pipe limit, no dilution).**

Organics – The organic chemical, nonylphenol, is reasonably expected to be present in the effluent from municipal wastewater treatment facilities. A qualitative determination of RP has been made as this facility is a major municipal wastewater treatment facility. Monitoring of nonylphenol has been included in the permit, beginning one year from the effective date of this permit. The delayed effective date allows time for the permittee to develop a site-specific PQL, if deemed necessary.

Whole Effluent Toxicity (WET) Testing – A qualitative RP has been made as this is a major POTW with potential for a wide variety of pollutants including metals and includes pretreatment program/industrial users.

1. In-Stream Waste Concentration (IWC) – Where monitoring or limitations for WET are deemed appropriate by the Division, the chronic in-stream dilution is critical in determining whether acute or chronic conditions shall apply. In accordance with Division policy, for those discharges where the chronic IWC is greater than 9.1% and the receiving stream has a Class 1 Aquatic Life use or Class 2 Aquatic Life use with all of the appropriate aquatic life numeric standards, chronic conditions will normally apply. Where the chronic IWC is less than or equal to 9.1, or the stream is not classified as described above, acute conditions will normally apply. The chronic IWC is determined using the following equation:

   IWC = [Facility Flow (FF)/(Stream Chronic Low Flow (annual) + FF)] X 100%

   The flows and corresponding IWC for the appropriate discharge point are:

Permitted Feature	Chronic Low Flow, 30E3 (cfs)	Facility Design Flow (cfs)	IWC, (%)
001A	34	6.7	16

   The IWC for this permit is 16%, which represents a wastewater concentration of 16% effluent to 84% receiving stream.

2. General Information – The permittee should read the WET testing section of Part I of the permit carefully, as this information has been updated in accordance with the Division's updated policy, Implementation of the Narrative Standard for Toxicity in Discharge Permits Using Whole Effluent Toxicity (Sept 30, 2010) . The permit outlines the test requirements and the required follow-up actions the permittee must take to resolve a toxicity incident. The permittee should also read the above mentioned policy which is available on the Permit Section website. The permittee should be aware that some of the conditions outlined above may be subject to change if the facility experiences a change in discharge, as outlined in Part II.A.2. of the permit. Such changes shall be reported to the Division immediately.

C. Parameter Speciation

Total / Total Recoverable Metals (EXCEPT Arsenic)
For standards based upon the total and total recoverable methods of analysis, the limitations are based upon the same method as the standard.

Total Mercury
Until recently there has not been an effective method for monitoring low-level total mercury concentrations in either the receiving stream or the facility effluent. To ensure that adequate data are gathered to show compliance with the limitation and consistent with Division initiatives for mercury, quarterly effluent monitoring for total mercury at low-level detection methods will be required by the permit.

Dissolved Metals / Potentially Dissolved
For metals with aquatic life-based dissolved standards, effluent limits and monitoring requirements are typically based upon the potentially dissolved method of analysis, as required under Regulation 31, Basic Standards and Methodologies for Surface Water. Thus, effluent limits and/or monitoring requirements for these metals will be prescribed as the "potentially dissolved" form.

Dissolved Manganese
The dissolved iron and chronic manganese standards are drinking water-based standards. Thus, sample measurements for these two parameters must reflect the dissolved fraction of the metals.

VII. ADDITIONAL TERMS AND CONDITIONS

A. Monitoring

Effluent Monitoring – Effluent monitoring will be required as shown in the permit document. Refer to the permit for locations of monitoring points. Monitoring requirements have been established in accordance with the frequencies and sample types set forth in the Baseline Monitoring Frequency, Sample Type, and Reduced Monitoring Frequency Policy for Industrial and Domestic Wastewater Treatment Facilities. This policy includes the methods for reduced monitoring frequencies based upon facility compliance as well as for considerations given in exchange for instream monitoring programs initiated by the permittee. Table VII-2 shows the results of the reduced monitoring frequency analysis for Permitted Feature 001A, based upon compliance with the previous permit.

The permittee is not eligible for reduced monitoring for copper because of the compliance schedule.

Table VII-1 – Monitoring Reduction Evaluation

Parameter	*Proposed Permit Limit*	*Average of 30-Day (or Daily Max) Average Conc.*	*Standard Deviation*	*Long Term Characterization (LTC)*	*Reduction Potential*
pH (su) Minimum	*min 6.5*	*7.3*	*0.1*	*7.1*	*2 Step*
pH (su) Maximum	*max 9.0*	*7.6*	*0.1*	*7.8*	
E. coli (#/100 ml)	*610*	*27*	*25*	*77*	*3 Levels*
TRC (mg/l)	*0.027*	*0*	*0*	*0*	*3 Levels*
NH3 as N, Tot (mg/l)	*5.3*	*0.77*	*1.5*	*3.77*	*2 Level*
BOD5, effluent (mg/l)	*30*	*3.3*	*1.3*	*5.9*	*3 Levels*
TSS, effluent (mg/l)	*30*	*3.4*	*1.9*	*7.2*	*3 Levels*
Oil and Grease (mg/l)	*10*	*0*	*0*	*0*	*3 Levels*
Cu, Dis (µg/l)	*60*	*20*	*8.1*	*36.2*	*2 Levels*
Hg, Tot (µg/l)	*0.061*	*0.0058*	*0.0073*	*0.0204*	*3 Levels*
Se, Dis (µg/l)	*15*	*6.7*	*2.3*	*11.3*	*1 Level*

B. Reporting

1. Discharge Monitoring Report – The City of Montrose facility must submit Discharge Monitoring Reports (DMRs) on a monthly basis to the Division. These reports should contain the required summarization of the test results for all parameters and monitoring frequencies shown in Part I.A of the permit. See the permit, Part I.B, C, and D for details on such submission.

2. Special Reports – Special reports are required in the event of an upset, bypass, or other noncompliance. Please refer to Part II.A. of the permit for reporting requirements. As above, submittal of these reports to the US Environmental Protection Agency Region VIII is no longer required.

C. Signatory and Certification Requirements

Signatory and certification requirements for reports and submittals are discussed in Part I.D. of the permit.

D. Compliance Schedules

There are no compliance schedules in this permit.

E. Stormwater

Pursuant to 5 CCR 1002-61.3(2), wastewater treatment facilities with a design flow of 1.0 MGD or more, or that are required to have an approved pretreatment program, are specifically required to obtain stormwater discharge permit coverage, or a Stormwater No Exposure Certification, in order to discharge stormwater from their facilities to state waters. The stormwater discharge permit applicable to wastewater treatment facilities is the CDPS General Permit for Stormwater Discharges Associated with Non-Extractive Industrial Activity.

Division records indicate that the City of Montrose applied for and obtained coverage under the CDPS General Permit for Stormwater Discharges Associated with Non-Extractive Industrial Activity for the

Montrose WWTF facility. The CDPS certification number is COR900098.

F. Economic Reasonableness Evaluation

Section 25-8-503(8) of the revised (June 1985) Colorado Water Quality Control Act required the Division to "determine whether or not any or all of the water quality standard based effluent limitations are reasonably related to the economic, environmental, public health and energy impacts to the public and affected persons, and are in furtherance of the policies set forth in sections 25-8-192 and 25-8-104."

The Colorado Discharge Permit System Regulations, Regulation No. 61, further define this requirement under 61.11 and state: "Where economic, environmental, public health and energy impacts to the public and affected persons have been considered in the classifications and standards setting process, permits written to meet the standards may be presumed to have taken into consideration economic factors unless:

a. A new permit is issued where the discharge was not in existence at the time of the classification and standards rulemaking, or

b. In the case of a continuing discharge, additional information or factors have emerged that were not anticipated or considered at the time of the classification and standards rulemaking."

The evaluation for this permit shows that the Water Quality Control Commission, during their proceedings to adopt the Classifications and Numeric Standards for Gunnison and Lower Dolores River Basins, considered economic reasonableness.

Furthermore, this is not a new discharger and no new information has been presented regarding the classifications and standards. Therefore, the water quality standard-based effluent limitations of this permit are determined to be reasonably related to the economic, environmental, public health and energy impacts to the public and affected persons and are in furtherance of the policies set forth in Sections 25-8-102 and 104. If the permittee disagrees with this finding, pursuant to 61.11(b)(ii) of the Colorado Discharge Permit System Regulations, the permittee should submit all pertinent information to the Division during the public notice period.

VIII. REFERENCES

A. Colorado Department of Public Health and Environment, Water Quality Control Division Files, for Permit Number CO0039624.

B. “Design Criteria Considered in the Review of Wastewater Treatment Facilities”, Policy 96-1, Colorado Department of Public Health and Environment, Water Quality Control Commission, April 2007.

C. Basic Standards and Methodologies for Surface Water, Regulation No. 31, Colorado Department of Public Health and Environment, Water Quality Control Commission, effective January 31, 2013.

D. Classifications and Numeric Standards for Gunnison and Lower Dolores River Basins, Regulation No. 35, Colorado Department of Public Health and Environment, Water Quality Control Commission, effective March 30, 2013.

E. Colorado Discharge Permit System Regulations, Regulation No. 61, Colorado Department of Public Health and Environment, Water Quality Control Commission, effective January 1, 2012.

F. Regulations for Effluent Limitations, Regulation No. 62, Colorado Department of Public Health and Environment, Water Quality Control Commission, effective July 30, 2012.

G. Pretreatment Regulations, Regulation No. 63, Colorado Department of Public Health and Environment, Water Quality Control Commission, effective April 01, 2007.

H. Biosolids Regulation, Regulation No. 64, Colorado Department of Public Health and Environment, Water Quality Control Commission, effective March 30, 2010.

I. Colorado River Salinity Standards, Regulation No. 39, Colorado Department of Public Health and Environment, Water Quality Control Commission, effective August 30, 1997.

J. Colorado's Section 303(d) List of Impaired Waters and Monitoring and Evaluation List, Regulation No 93, Colorado Department of Public Health and Environment, Water Quality Control Commission, effective April 30, 2010.

K. Antidegradation Significance Determination for New or Increased Water Quality Impacts, Procedural Guidance, Colorado Department of Public Health and Environment, Water Quality Control Division, effective December 2001.

L. Memorandum Re: First Update to (Antidegradation) Guidance Version 1.0, Colorado Department of Public Health and Environment, Water Quality Control Division, effective April 23, 2002.

M. Determination of the Requirement to Include Water Quality Standards-Based Limits in CDPS Permits Based on Reasonable Potential, Colorado Department of Public Health and Environment, Water Quality Control Division, effective December2002.

N. The Colorado Mixing Zone Implementation Guidance, Colorado Department of Public Health and Environment, Water Quality Control Division, effective April 2002.

O. Baseline Monitoring Frequency, Sample Type, and Reduced Monitoring Frequency Policy for Domestic and Industrial Wastewater Treatment Facilities, Water Quality Control Division Policy WQP-20, May 1, 2007.

P. Implementing Narrative Standards in Discharge Permits for the Protection of Irrigated Crops, Water Quality Control Division Policy WQP-24, March 10, 2008.

Q. Implementing Narrative Standard for Toxicity in Discharge Permits Using Whole Effluent Toxicity (WET) Testing. Colorado Department of Public Health and Environment, Water Quality Control Division Policy Permits-1, September 30, 2010.

R. Policy for Conducting Assessments for Implementation of Temperature Standards in Discharge Permits, Colorado Department of Public Health and Environment, Water Quality Control Division, Policy Number WQP-23, effective July 3, 2008.

S. Policy for Permit Compliance Schedules, Colorado Department Public Health and Environment, Water Quality Control Division Policy Number WQP-30, effective December 2, 2010.

T. Procedural Regulations for Site Applications for Domestic Wastewater Treatment Works, Regulation No. 22, Colorado Department of Public Health and Environment, Water Quality Control Commission, effective September 30, 2009.

U. Regulation Controlling discharges to Storm Sewers, Regulation No. 65, Colorado Department of Public Health and Environment, Water Quality Control Commission, effective May 30, 2008.

V. Water and Wastewater Facility Operator Certification Requirements, Regulation No. 100, Colorado Department of Public Health and Environment, Water Quality Control Commission, effective September 30, 2007.

W. Total Maximum Daily Load Assessment. Gunnison River and Tributaries, Uncompahgre River and Tributaries. Delta/Mesa/Montrose Counties, Colorado. Colorado Department Public Health and Environment, January 2011.

Abigail Ogbe
05/22/13

IX. PUBLIC NOTICE COMMENTS

The public notice period was from April 19, 2013 to May 20, 2013. Comments were received from the City of Montrose. Additional comment regarding the WQA was received from the West Montrose Sanitation District. Topical summaries of the comments and the response of the Division are given below.

COMMENT 1: Comment from West Montrose SD
PAGE 11 of 31 of the WQA, TABLE A-5, TMDL Waste Load Allocations for Selenium: Under the "Facility" tab in the table, the design flow for the "West Montrose SD WWTF" should read 0.7 MGD and the design flow for the "City of Montrose WWTF" should read 4.32 MGD.

RESPONSE 1: This was a typo and has been corrected. Note that the allocations for each facility in the permit are correct.

COMMENT 2: The frequency of testing for chronic WET has been increased from bi-annually to quarterly? We have never had a violation and the cost is high. $1500.00 for each test. Since we have never had a failure we request that it remain semi-annual.

RESPONSE 2: The previous permit granted this facility semi-annual monitoring for WET based on review of past effluent report. Since this facility has not had a violation for WET over several years of monitoring, this permit will grant the semi-annual monitoring for WET. The frequency for WET has been changed to semi-annual.

COMMENT 3: Request that the sample type for TDS be changed to "Grab."

RESPONSE 3: The sample type for TDS has been changed to "Grab."

COMMENT 4: For Total Inorganic Nitrogen. In the draft permit the frequency of analysis is Weekly. In Regulation 85 starting in March of this year it requires us to sample monthly. Why is this being changed?

RESPONSE 4: The requirements for the Nutrient Monitoring Program in regulation 85 are different from the TIN requirement in this permit. See Section VI.B of the factsheet under Nitrate, Nitrite / Total Inorganic Nitrogen. Monitoring of TIN has been reduced to Monthly since monthly monitoring over the 5-year life of the permit will provide sufficient result to conduct a quantitative RP analysis. The result for TIN monitoring under regulation 85 may be used for this permit if it meets the monitoring, sampling and testing requirement provided in Part 1.D of this permit.

COMMENT 5: Why has monitoring for ammonia changed from 2 days/month to weekly?

RESPONSE 5: Based on the monitoring frequency policy, a domestic mechanical wastewater treatment facility discharging between 2.5 MGD and 5.0 MGD should monitor for ammonia, 3 times per week. Applying the 2-level monitoring reduction provided in Table VII-I of the factsheet, would reduce the 3 times per week ammonia monitoring to weekly. Because the current ammonia limits are more stringent, only 2-level reduction occurred. However, since this facility has not had any ammonia exceedancs in the past two years, and because it appears the the facility is able to consistently meet these new limitations, the Division has further reduced ammonia monitoring in this permit to 2 days/month.

COMMENT 6: The limits set for selenium don't appear like they will be a problem to meet. Selenium does appear naturally here in the soil and in the groundwater.

RESPONSE 6: No response necessary.

Note:
The starting date for nonylphenol monitoring has been changed from 06/01/2014 to 07/01/2014, to allow for quarterly monitoring to begin at the beginning of the quarter.

Abigail Ogbe
05/22/13